Abstract of the Disclosure

Methods and apparatus for encoding image data to facilitate subsequent insertion of local image data are described. Also described are methods and apparatus inserting image data, e.g., at local broadcast stations, without having to fully decode a received encoded bitstream. The encoding methods of the present invention involve treating images to be encoded as a plurality of distinct, non-overlapping image regions or segments for encoding purposes. Image segments which are designated for use for local data insertion are not used as reference data for motion compensated prediction purposes when generating motion vectors to represent image areas, e.g., the area representing the main picture, which are outside the local data insertion segments. Because image segments which may be replaced are not used as reference data for image segments which will not be replaced, unintentional prediction errors which might otherwise result from replacing one or more image segments as part of a local data insertion operation are avoided. In one embodiment, the segments designated for use when inserting local image data are encoded using only the corresponding image segments of preceding or subsequent images. In such an embodiment, when all or some of the original content of a segment is to be used when inserting data, only the data representing the image segment into which new data is to be inserted needs to be decoded since motion vectors in the insertion region do not reference image areas outside the insertion region.